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STATE OF SOUTH CAROLINA)

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Time: 10:40

(Caption of Case)

Request for Accounting Order Related to Storm Damage Reserve Fund

BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

COVER SHEET

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Posted: tod

Dept:

DOCKET NUMBER: ~~1995-1000-E~~ 2007-335-E

Date: 9/13/07

Time:

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Submitted by: Belton T. Zeigler

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NOTE: The cover sheet and information contained herein neither replaces nor supplements the filing and service of pleadings or other papers as required by law. This form is required for use by the Public Service Commission of South Carolina for the purpose of docketing and must be filled out completely.

DOCKETING INFORMATION (Check all that apply)

☐ **Emergency Relief demanded in petition** ☒ **Request for item to be placed on Commission's Agenda expeditiously**

☐ **Other:**

INDUSTRY (Check one)	NATURE OF ACTION (Check all that apply)		
☐ Electric	☐ Affidavit	☐ Letter	☒ Request
☒ Electric/Gas	☐ Agreement	☐ Memorandum	☐ Request for Certificatio
☐ Electric/Telecommunications	☐ Answer	☐ Motion	☐ Request for Investigatior
☐ Electric/Water	☐ Appellate Review	☐ Objection	☐ Resale Agreement
☐ Electric/Water/Telecom.	☐ Application	☐ Petition	☐ Resale Amendment
☐ Electric/Water/Sewer	☐ Brief	☐ Petition for Reconsideration	☐ Reservation Letter
☐ Gas	☐ Certificate	☐ Petition for Rulemaking	☐ Response
☐ Railroad	☐ Comments	☐ Petition for Rule to Show Cause	☐ Response to Discovery
☐ Sewer	☐ Complaint	☐ Petition to Intervene	☐ Return to Petition
☐ Telecommunications	☐ Consent Order	☐ Petition to Intervene Out of Time	☐ Stipulation
☐ Transportation	☐ Discovery	☐ Prefiled Testimony	☐ Subpoena
☐ Water	☐ Exhibit	☐ Promotion	☐ Tariff
☐ Water/Sewer	☐ Expedited Consideration	☐ Proposed Order	☐ Other:
☐ Administrative Matter	☐ Interconnection Agreement	☐ Protest	
☐ Other:	☐ Interconnection Amendment	☐ Publisher's Affidavit	
	☐ Late-Filed Exhibit	☐ Report	

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September 10, 2007

VIA HAND DELIVERY

The Honorable Charles L. A. Terreni
Chief Clerk & Administrator
Public Service Commission of South Carolina
101 Executive Center Drive
Columbia, South Carolina 29210

Re: Letter Requesting Accounting Order Related to Storm Damage Reserve Fund

Dear Mr. Terreni:

The purpose of this letter is to request that the South Carolina Public Service Commission (the "Commission") issue an accounting order related to the storm damage reserve maintained by South Carolina Electric & Gas Company ("SCE&G" or the "Company") under the terms of Order No. 96-15 (the "Storm Damage Reserve"). Specifically, SCE&G requests (1) authorization to increase the maximum amount of the Storm Damage Reserve from $50 million to $100 million, and (2) authorization to pay annual premiums for hurricane related transmission and distribution asset insurance from the Storm Damage Reserve until the next retail rate case after Docket No. 2007-229-E is completed.

Storm Damage Reserve Cap

SCE&G respectfully requests the Commission allow it to increase the maximum amount of its damage reserve from $50 million to $100 million. When the $50 million cap was established in 1995, the replacement cost of SCE&G's transmission and distribution ("T&D") assets was approximately $900 million. Order No. 96-15 at 64. Over the intervening 12 years, the replacement costs of those assets has more than doubled to approximately $2.5 billion.

ABS Consulting recently completed a Hurricane Risk and Ice Storm Loss and Reserve Solvency Analyses for SCE&G (the "Risk and Solvency Study") attached hereto as Exhibit A. While Hurricane Hugo inflicted approximately $52 million in damages to SCE&G's T&D assets, a Category III storm coming ashore today between Beaufort and Edisto Island would be expected to cost SCE&G between $70 million and $110 million. If a Category IV storm came ashore in that location today, the restoration costs to SCE&G are estimated to be between $149 million and $225 million.

As of July 31, 2007, the Storm Damage Reserve has a balance of $47.6 million and approximately $6 million is being added to the fund each year. The Risk and Solvency Study also shows that while SCE&G's storm damage costs are likely to be highly variable from year to year, the average claim against the Reserve is estimated to be $10.2 million annually. With a $50 million cap, there is a 66% probability that the current fund will be fully depleted within five years. Raising the cap to $100 million reduces that probability to 56%. The Risk and Solvency Study also shows that with the $50 million cap, claims against the Reserve are likely to exceed available funds by $33 million over the next 10 years. Raising the cap to $100 million reduces the expected shortfall to $16 million.

For these reasons, SCE&G respectfully requests that it be allowed to increase the cap on its Storm Damage Reserve from $50 million to $100 million.

Insurance Premium Request

For the first time in decades, SCE&G has located underwriters willing to provide it with a meaningful component of insurance for its transmission and distribution ("T&D") assets on reasonable terms. The policy would provide insurance coverage for SCE&G's hurricane related losses between $95 million and $155 million (*i.e.*, the coverage has a $60 million maximum pay out per occurrence and is subject to a deductible of $95 million.). The annual premium for this insurance would be $2.72 million. The insurance is being underwritten based on model calculations of the damage expected from hurricanes of various intensities and storm tracks that might make landfall in SCE&G's service territory. These models are incorporated into the insurance policy and the insurer's liability for claims is limited to the damage estimates produced by these models using meteorological data from the actual hurricane. Because the risks covered by this insurance are storm-related, SCE&G respectfully requests the Commission to issue an order allowing the annual premiums for storm-damage T&D insurance to be drawn from the Storm Damage Reserve.

SCE&G respectfully requests that the Commission issue an order in this matter by September 30, 2007. This will allow the $2.72 million insurance premium to be properly accounted for in SCE&G's third quarter 2007 financial statements. Neither of the two actions requested will have any impact on SCE&G rates. Accordingly, S.C. Code Ann. Section 58-27-870(F) (Supp. 2006) allows the Commission to issue the requested relief without notice or hearing.

By copy of this letter, we are also serving the South Carolina Office of Regulatory Staff with a copy of the Risk and Solvency Study.

Thank you for your consideration of this matter.

Respectfully Submitted,

Belton T. Zeigler

Attachments

cc: Shannon Bowyer Hudson, Esq.

EXHIBIT A

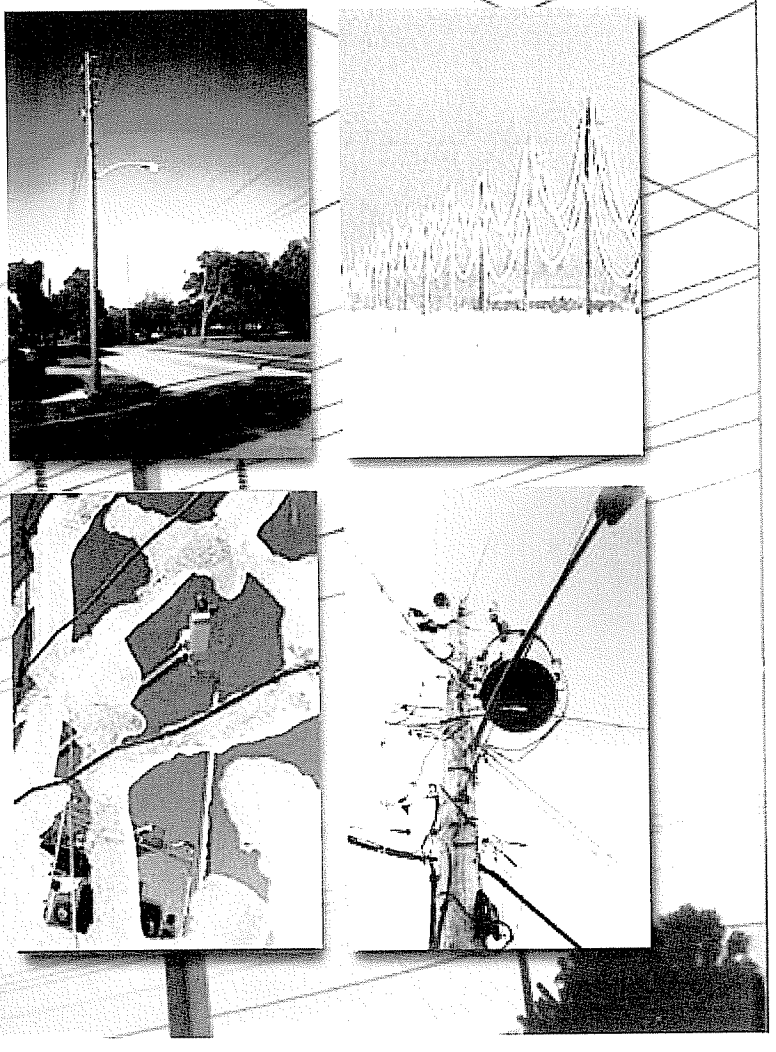
THIS DOCUMENT IS AN EXACT DUPLICATE, WITH THE EXCEPTION OF THE FORM OF THE SIGNATURE, OF THE E-FILED COPY SUBMITTED TO THE COMMISSION IN ACCORDANCE WITH ITS ELECTRONIC FILING INSTRUCTIONS

ABS Consulting

SCE&G
A SCANA COMPANY

SCANA Corporation

Hurricane and Ice Storm Loss and Reserve Solvency Analyses



August
2007

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Executive Summary

OVERVIEW OF STUDY

On behalf of SCE&G, ABS Consulting has analyzed the exposure of SCE&G's transmission and distribution ("T&D") assets to damage from hurricanes and ice storms. ABS Consulting has also assessed the expected performance of the SCE&G Storm Damage Reserve in funding these potential future losses.

Hurricane Damage

Key study conclusions related to hurricane risk are as follows:

- SCE&G's T&D assets are most vulnerable to hurricanes making landfall between Hilton Head and Charleston.
- The average damage from single Category 3 hurricane events making landfall in that area ranges from $70 million to $110 million.
- The average damage from single Category 4 hurricane events making landfall in that area ranges from $120 million to $220 million.
- SCE&G has a 3.4% chance per year of experiencing hurricane damage to T&D assets of $50 million or more.
- SCE&G has a 1.6% chance per year of experiencing hurricane damage to T&D assets of $100 million or more.
- The expected average damage to SCE&G T&D assets from hurricanes over a long period of time is estimated to be $7.8 million per year.

Ice Storm Damage

Key study conclusions related to ice storm risk are as follows:

- Ice storm damage is likely to be more frequent within SCE&G's system than hurricane damage.
- SCE&G has a 20% chance per year of experiencing ice storm damage to T&D assets of $10 million or more.
- SCE&G has a 2.4% chance per year of experiencing ice storm damage to T&D assets of $50 million or more.
- While ice storms causing more than $100 million in damage are possible, the chance that occurring in any given year is only 0.37%.
- The expected average damage to SCE&G T&D assets from ice storms over a long period of time is estimated to be $7.9 million per year.

Storm Damage Reserve Fund Performance

Key study conclusions related to the expected performance of SCE&G's Storm Damage Reserve (the "Reserve") are as follows:

- The expected annual damage to SCE&G's T&D assets from hurricanes and ice storms combined over a long period of time is estimated to be $15.7 million per year.
- Of this $15.7 annual damage, $10.2 million is estimated to be the obligation of the Reserve, considering a "deductible" of $2.5 million per year, and excluding the capital portions of storm damage costs.
- The $10.2 million estimated annual damage payable from the Reserve is substantially greater than the $6 million per year of annual accruals to the Reserve. As a result, the Reserve can be expected to be depleted over time.
- There is a 66% chance that the Reserve will be fully depleted within five years.
- Over a ten years prospective period, claims against the Reserve can be expected to exceed available funds by $33 million.
- The analyses showed that for the fifth percentile of the Reserve balances, or one-twentieth of the simulation outcomes, claims against the Reserve could exceed available funds by $189 million or more during a ten years prospective period.
- The Reserve is subject to a Cap of $50 million. When that Cap is reached, contributions to the Reserve would be suspended. Raising the Cap on the Reserve from $50 million to $100 million would reduce the likelihood of the Reserve being depleted within five years from 66% to 56%.

HURRICANE AND ICE STORM LOSS ASSESSMENT

ABS Consulting considered four basic elements in modeling the risk of hurricanes and ice storms to SCE&G"s T&D assets:

- **Assets at risk:** First, SCE&G determined the replacement cost of T&D assets and mapped the location of those assets.
- **Loss Perils**: ABS Consulting used its proprietary storm damage models to simulate thousands of possible hurricanes and ice storms that could affect SCE&G's assets. These models calculated the probabilities of each of these potential storms occurring in any given year.
- **Asset vulnerabilities:** The ABS Consulting models evaluated the vulnerability of SCE&G's T&D assets to damage from simulated wind and ice events.
- **Portfolio Damage and Loss:** Lastly, this peril and vulnerability information is used to estimate the expected damage to SCE&G's asset from thousands of simulated hurricanes and ice storms.

From this analysis, a probabilistic database of hurricane and ice storm losses was developed. The anticipated frequencies and expected damage to SCE&G's assets for all storms were combined to calculate the expected annual damage (EAD) and annual aggregate damage exceedance probabilities for SCE&G's system. The results of these analyses are summarized in Table ES-1a below.

Table ES-1a
SCE&G Transmission and Distribution Risk Profile

ASSETS	Transmission and distribution assets consisting of: transmission structures, and conductors; distribution poles, transformers, conductors, lighting and other miscellaneous assets	
LOCATION	All T&D assets located within the State of South Carolina	
ASSET VALUE	Normal replacement value is approximately $2.5 billion, of which approximately half is transmission and half is distribution	
LOSS PERILS	Hurricanes (SSI 1 to 5) and Ice Storms	
	Hurricane Hazard (one year)	**Ice Storm Hazard (one year)**
EXPECTED ANNUAL DAMAGE	$7.8 million total damage	$7.9 million total damage
10% AGGREGATE DAMAGE EXCEEDANCE VALUE	$ 18 million total damage	$ 24 million total damage
5% AGGREGATE DAMAGE EXCEEDANCE VALUE	$ 36 million total damage	$ 40 million total damage
1% AGGREGATE DAMAGE EXCEEDANCE VALUE	$ 150 million total damage	$ 70 million total damage

The **Loss Perils** considered are SSI-Category 1-5 hurricanes and ice storms. These events were chosen because they represent the recurring weather events that have the potential to cause major damage to the SCE&G T&D system. As discussed below, the National Oceanographic and Atmospheric Administration and other experts have concluded that the South Atlantic region is in a period of heightened hurricane formation. The study is based on hurricane frequencies and intensities consistent with this view.

The **Expected Annual Damage** or EAD is the estimated annual cost of restoring service, given hurricane and ice storm damage, averaged over a long period of time. The EAD from hurricanes and ice storms is estimated to be $15.7 million. Hurricanes and ice storms can be catastrophic but infrequent events. The EAD is an average of all storm damage over many years and is not expected to occur every year.

The **Aggregate Damage Exceedance Value** is the likelihood of damage to SCE&G's T&D assets exceeding the given value from all storms in a year.

- The **10% Aggregate Damage Exceedance Value** indicates that there is a 10% chance each year (one-in-ten) that SCE&G's damage from hurricanes will exceed $18 million and that its damage from ice storms will exceed $24 million.
- The **5% Aggregate Damage Exceedance Value** indicates that there is a 5% chance each year (one-in-twenty) that SCE&G's hurricane damage will exceed $36 million and its ice storm damage will exceed $40 million.
- The **1% Aggregate Damage Exceedance Value** indicates that there is a 1% chance each year (one-in-one hundred) that SCE&G's hurricane damage will exceed $150 million and its ice storm damage will exceed $70 million.

ANALYSIS OF THE SOLVENCY OF THE STORM DAMAGE RESERVE

The second part of the study evaluates how SCE&G's Storm Damage Reserve can be expected to perform when subjected to the estimated annual storm damage over a prospective ten year period. SCE&G's Storm Damage Reserve represents a source of funds available for future storm damage costs.

Thousands of combinations of ice storms and hurricanes could occur during any given ten-year period. For that reason, the Reserve solvency evaluation relies on what is known as Monte-Carlo analysis. In this analysis, 10,000 individual 10-year hurricane and ice storm loss simulations are performed for SCE&G's Reserve. These analyses used the results of the single year storm damage assessment model, discussed above, and reflected the derived damage probabilities in each year of the ten year Reserve solvency simulation. When modeled storm damage exceeded the $2.5 million deductible in any year, the appropriate amount of loss was charged to the Reserve. Annual accruals to the Reserve were taken as positive accumulations to the account, and were increased at a 2% annual rate over the ten year simulations to reflect SCE&G's expected rate of growth of accruals from it's per KWh storm damage charge.

The value of SCE&G at-risk assets was similarly increased 5.5% per year to reflect both inflation in replacement costs and expansion of the T&D system to support customer growth in SCE&G's territory. The analyses assumed a starting balance in the Reserve of $46 million.

These analyses showed that there was a 66% likelihood that the Reserve would not have sufficient funds to meet storm damage obligations during the first five years of the ten year simulation. The average or expected balance of the 10,000 simulations indicated that at the end of ten years, claims against the Reserve could exceed the funds available to it by $33 million.

The analyses showed that for the fifth percentile of the Reserve balances, or one-twentieth of the simulation outcomes, claims against the Reserve could exceed available funds by $189 million or more during a ten years prospective period.

The analysis next considered the effect of changing the Cap that currently exists on the Reserve. Information provided by SCE&G indicates that the Reserve is subject to a $50 million Cap and that when this Cap is reached future accruals would cease.

The study shows that increasing the Cap significantly lowers the probability of the Reserve having insufficient funds during the first five years. That probability is reduced from 66% with a $50 million cap, to 56% with a $100 million Cap. Even with a $100 million Cap, the Reserve would not be expected to have sufficient funds to meet all claims over a ten year period. With a $100 million Cap, claims would be expected to exceed available funds by $16 million compared to a shortfall of $33 million with a $50 million Cap.

Table ES-1b
SCE&G Storm Damage Reserve Performance

RESERVE PERFORMANCE ANALYSES RESULTS			
Cap ($M)	**Expected Balance at 10 years ($M)**	**5th%ile Balance at 10 years($M)**	**Probability of insufficient funds within first 5 years**
$50	($33)	($189)	66%
$75	($19)	($183)	58%
$100	($16)	($183)	56%

1.0 Hurricane Loss Analysis

The assets of SCE&G's transmission and distribution operations are exposed to and in the past have sustained damage from hurricanes. The exposure of these transmission and distribution assets to hurricane damage is described and potential losses are quantified. ABS Consulting developed damage estimates for possible hurricane events using an advanced computer model simulation program USWIND™ developed by EQECAT, Inc., an ABS Group company. Hurricane damage is simulated using USWIND, and data provided by SCE&G.

Loss Estimation Methodology

The basic elements of the hurricane loss analysis include:

- **Assets at risk:** define and locate
- **Define the hazard**: apply probabilistic hurricane model for the region
- **Asset vulnerabilities:** severity (wind speed) versus damage
- **Portfolio Damage:** probabilistic analysis -damage/ loss

This portfolio risk analysis process is idealized in Figure 1-3

These analyses take into consideration historical experience as well as meteorological, topographical, valuation, and structural data provided by SCE&G or otherwise available to ABS Consulting. The actual damage and financial consequences caused by a hurricane will vary according to the precise nature of the event and many variables including the storm severity and location, actual asset vulnerabilities, cost and time required to repair and restore electrical service which may cause the actual losses to differ from those estimated in this report.

Transmission and Distribution Assets

The distribution and transmission asset replacement values provided by SCE&G are approximately $2.5 billion. Transmission and distribution asset values are shown by County in Figures 1-1 and 1-2 below.

Hurricane Exposure

The hurricane exposure is analyzed using a probabilistic approach, which considers the full range of potential hurricane characteristics and corresponding losses. Probabilistic analyses identify the probability of damage exceeding a specific dollar amount. USWIND™ is a probabilistic model designed to estimate damage and losses due to the occurrence of hurricanes. EQECAT, Inc. proprietary computer software USWIND is one of only four models evaluated and determined acceptable by the Florida Commission on Hurricane Loss Projection Methodology (FCHLPM) for projecting hurricane loss costs.

The historical annual frequency of hurricanes has varied significantly over time. There are many causes for the temporal variability in hurricane formation. While stochastic variability is a significant factor, many scientists believe that the formation of hurricanes is also related to climate variability. ABS Consulting has developed two sets of stochastic hurricane event frequencies for the North Atlantic – a Long Term view based on the full set of historical hurricane data from 1900 through 2005, and a Short Term view based on the subset of the record. The short term hurricane hazard been used in the analysis of SCE&G T&D assets as it is believed by National Oceanic Atmospheric and Administration (NOAA) and other meteorological experts to best reflect the current period of heightened hurricane formation. One of the primary climate cycles having a significant correlation with Hurricane activity is the Atlantic Multidecadal Oscillation (AMO). It has been suggested that the formation of hurricanes in the Atlantic Ocean off the coast of Africa is related to the amount of rainfall in the Western African Sahel region. Years in which rainfall is heavy have been associated with the formation of a greater number of hurricanes. The AMO cycle consists of a warm phase, during which the tropical and sub-tropical North Atlantic have warmer than average temperatures at the surface and in the upper portion relevant to hurricane activity, and a cool phase, during which these regions of the ocean have cooler than average temperatures. In the period 1900 through 2005, the AMO has gone through the following phases:

1900 through 1925	Cool	(Decreased Hurricane Activity)
1926 through 1969	Warm	(Increased Hurricane Activity)
1970 through 1994	Cool	(Decreased Hurricane Activity)
1995 through 2005	Warm	(Increased Hurricane Activity)

The National Oceanic and Atmospheric Administration believes that we entered a warm phase of AMO around 1995 which can be expected to continue for at least several years; historically, each phase of AMO has lasted approximately 25 to 40 years..

Probabilistic Annual Damage & Loss is computed using the results of thousands of random variable hurricanes. Annual damage estimates are developed for each individual site and aggregated to overall portfolio damage amounts. Damage is defined as the total cost including the operations and maintenance (O&M) and capital components associated with repair and/or replacement of T & D assets necessary to promptly restore service in a post storm environment. This cost is typically larger than the costs associated with scheduled repair and replacement programs.

Factors considered in the analysis include the location of SCE&G's T & D assets, the probability of hurricanes of different intensities and/or landfall points impacting those assets, the vulnerability of those assets to hurricane damage, and the costs to repair assets and restore electrical service.

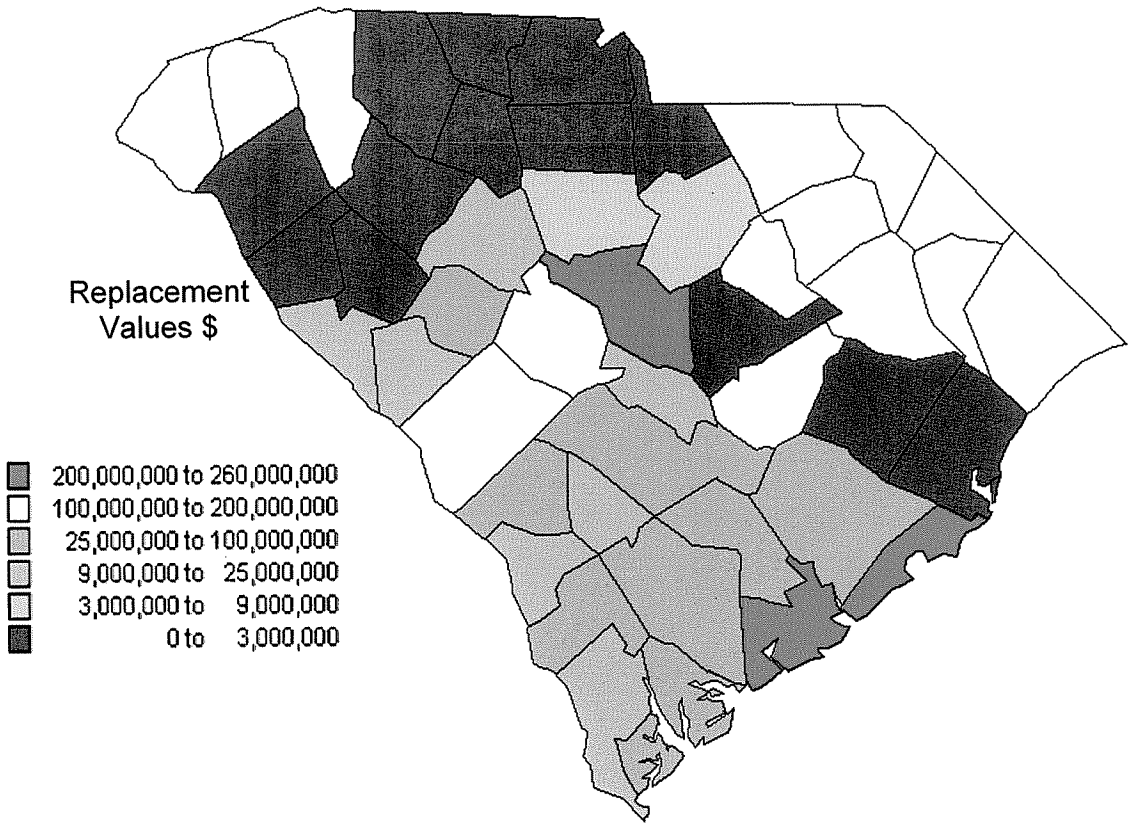


Figure 1-1: Distribution Assets Less Than 69kV
Values by County

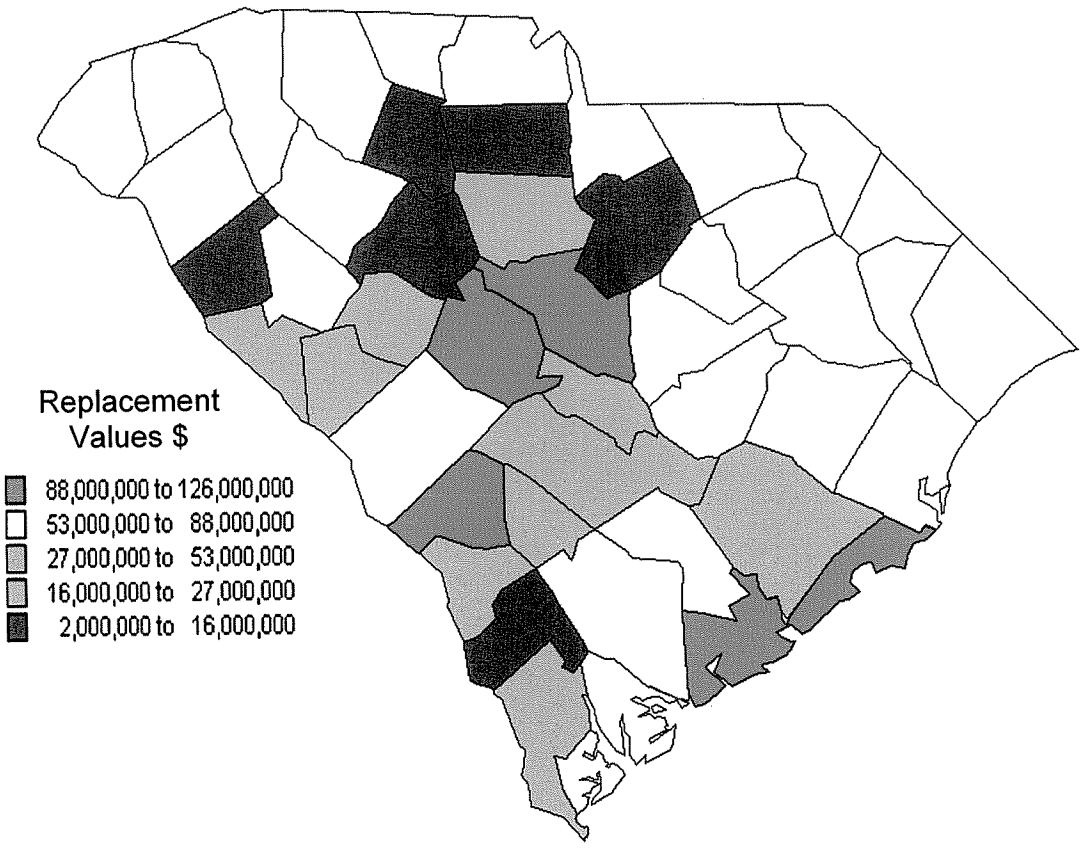


Figure 1-2: Transmission Assets Greater Than 69kV
Values by County

Transmission and Distribution Asset Vulnerabilities

SCE&G's loss history from the 2005 Hurricane Floyd, 1999 and Hurricane Hugo 1989 as well as other utility industry experience were considered in the calibration of the hurricane loss model. The hurricane loss experience includes the effects of many factors including the post hurricane costs of labor, mutual aid and other factors associated with the hurricane restoration process utilized by SCE&G that is discussed in more detail in Section 4.

Aggregate Damage Exceedance and Expected Annual Damage

A probabilistic database of losses is developed using the hurricane hazard, assets at risk and their vulnerabilities. For each hurricane, the center, shape, geographical orientation, track and wind speeds were defined. The wind field for each hurricane is integrated with the asset vulnerability and the asset locations to compute the damage. The annual frequency and the portfolio damage for each simulated hurricane is determined. By manipulating this database of thousands of hurricane losses, various loss exceedance or non-exceedance distributions are generated.

The frequencies and computed damage for all hurricanes are combined to calculate the expected annual loss and the annual aggregate exceedance relations.

Aggregate damage exceedance calculations are developed by keeping a running total of damage from ***all possible events*** in a year. At the end of year, the aggregate damage for all events is then determined by probabilistically summing the damage distribution from each event, taking into account the event frequency. The process considers the probability of having zero events, one event, two events, etc. during the year.

A series of probabilistic analyses were performed, using the vulnerability curves derived for SCE&G T&D assets and the computer program USWIND™. A summary of the analyses are presented in Table 1-3, which shows the aggregate damage exceedance probability for damage levels between zero and $200 million dollars.

For each damage level shown, the probability of damage exceeding a specified value is shown. For example, the probability of damage exceeding $10 million in one year for

the hurricane hazard is 14.1%. The analysis calculates the probability of damage from all hurricanes and aggregates the total.

Table 1-3. provides the aggregate damage exceedance probabilities for the SCE&G T & D assets for a series of damage levels at $10 million intervals.

The second column of the table, labeled 1 year Exceedance Probability, provides the 1-year modeled probability of exceeding the damage level, i.e. the probability that the total damage from all events in a 1 year period will exceed that level.

The expected annual damage (EAD) to T&D assets from the short term hurricanes hazard is $7.8 million. This value represents the average damage from all simulated hurricanes. The EAD is not expected to occur each and every year. Some years will have no damage from hurricanes, some years will have small amounts of damage and a few years will have large amounts of damage. The EAD represents the average of all hurricane losses over a long period of time.

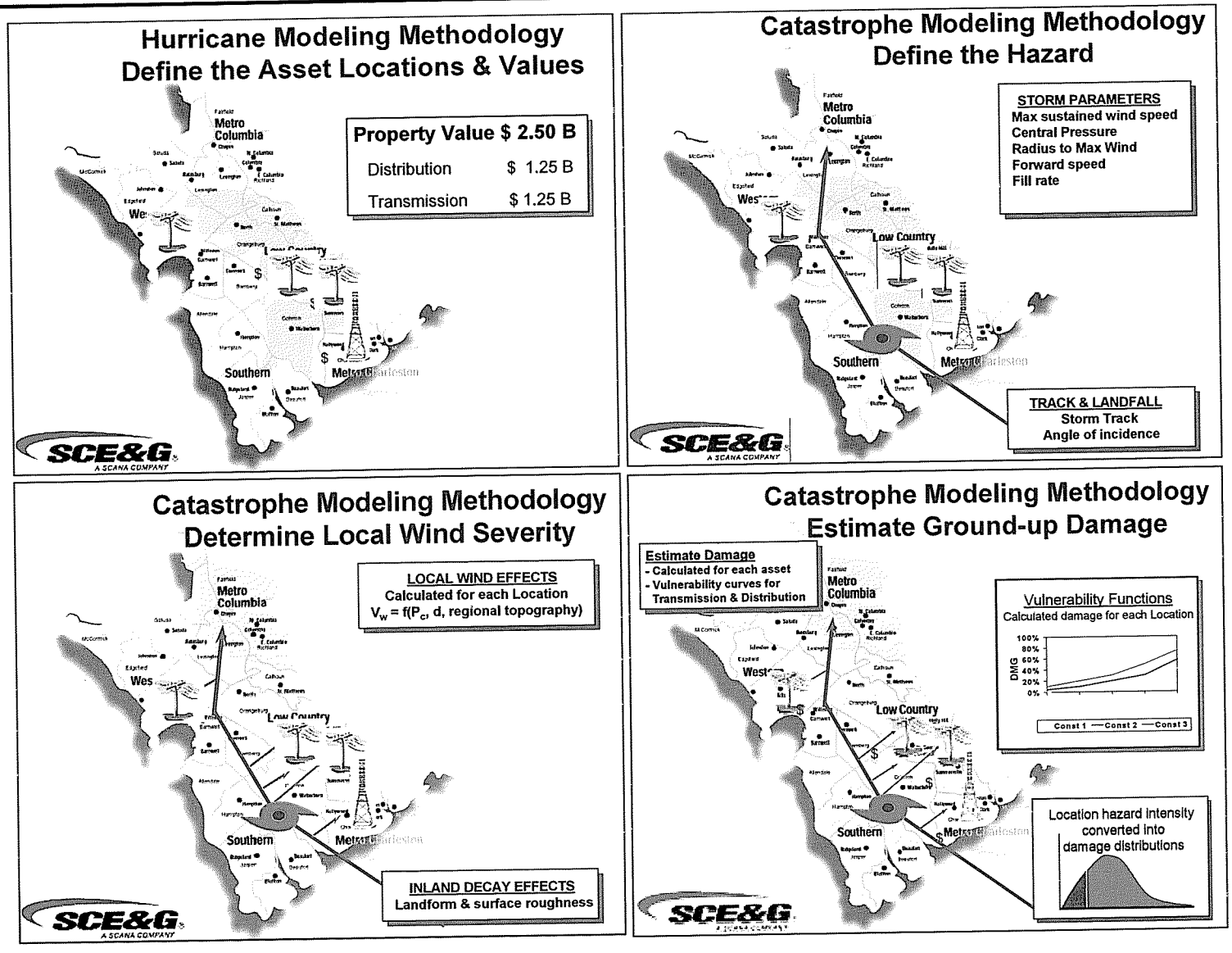


Figure 1-3: Portfolio Analysis Methodology

Table 1-3

SCE&G T & D ASSETS
AGGREGATE TOTAL DAMAGE EXCEEDANCE PROBABILITIES
SHORT TERM HURRICANE HAZARD

Damage Level	1 Year
($)	Exceedance Probability
≥ 500,000	24.73%
10,000,000	14.12%
20,000,000	8.97%
30,000,000	6.09%
40,000,000	4.51%
50,000,000	3.45%
60,000,000	2.79%
70,000,000	2.37%
80,000,000	2.06%
90,000,000	1.83%
100,000,000	1.64%
110,000,000	1.48%
120,000,000	1.35%
130,000,000	1.22%
140,000,000	1.12%
150,000,000	1.02%
160,000,000	0.93%
170,000,000	0.84%
180,000,000	0.77%
190,000,000	0.69%
200,000,000	0.63%

2.0 Ice Storm Loss Analysis

Ice Storm Exposure

The ice storm exposure is analyzed from a probabilistic approach, which considers the full range of potential ice accretion characteristics and corresponding losses. Probabilistic analyses identify the probability of damage exceeding a specific dollar amount. USWinterStorm™ is a probabilistic model designed to estimate damage and losses due to the occurrence of ice and winter weather.

From the Mid-Atlantic coast to New England, the classic winter storm is called a Nor'easter— a strong coastal, extra-tropical storm, that develops off the eastern seaboard of the United States and then moves northeasterly along the coast. These storms cause strong northeasterly winds over coastal areas, and they may be accompanied by rain, heavy snow, and gale force to hurricane force winds. Wind-driven waves batter the coast from Georgia to Maine, causing flooding and severe beach erosion. Nor'easters typically form just north of Cuba or over the Florida peninsula. Those that form north of Cuba tend to track slowly north while intensifying over the open ocean. Storms that form over the Florida peninsula track northeast and intensify over the Gulf Stream. In both cases, these intense low pressure systems move northeast along the eastern seaboard and eventually into the open waters of the North Atlantic. The storm taps the Atlantic's moisture-supply and may dump heavy snows over a densely populated region. The snow and wind may combine into blizzard conditions and form deep drifts paralyzing the region. Ice Storms can also be caused by Nor'easters: Mountains, such as the Appalachians, act as a barrier to cold air trapping it in the valleys and adjacent low elevations. Warm air and moisture moves over the cold, trapped air. Rain falls from the warm layer onto a cold surface below becoming ice. Other winter storms result from cold air moving from the lee of the Rockies and penetrating south across Texas, the Gulf Coast and the Southeast (Figure 2-1).

The types of precipitation that can fall from a winter storm include snow, sleet, freezing rain and rain. The precipitation type that reaches the ground depends on the air mass structure through which the precipitation falls and the relative position of the low-pressure center and its associated warm and cold fronts. Most winter precipitation is the

result of overrunning, a condition in which the air from a warm sector of the low-pressure system catches up to colder air ahead. Because the warm air is lighter, it is forced up and over the slow-moving, denser cold air near the ground (Figure 2-2).

Figure 2-1: Typical winter jet stream and US winter storm geographic pattern and the affected region.

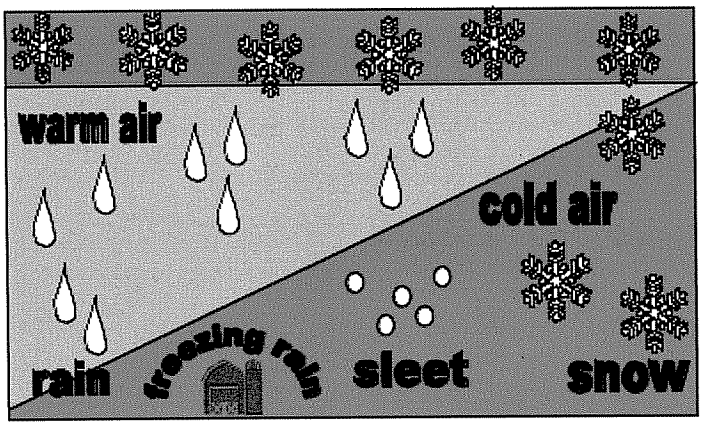


Figure 2-2: Various types of precipitation resulting from overrunning, when warm air rides over colder air near the ground.

Transmission and Distribution Asset Vulnerabilities

SCE&G's recent ice storm loss history includes ice storms in 2000, 2002 and 2004. These storms have been produced significant ice accumulation in parts of SCE&G's service territory that has resulted in damage to T&D assets. Damage from ice storms results from ice accumulation of structures, conductors and components causing direct damage. Damage also occurs from the ice accumulation and failure of trees and tree branches that impact poles and conductors. The ice storm loss experience includes the effects of many factors including the post storm costs of labor, mutual aid and other factors associated with the hurricane restoration process utilized by SCE&G that is discussed in more detail in Section 4.

Loss Estimation Methodology

The basic components of the hurricane risk analysis include:

- **Assets at risk:** define and locate
- **Ice storm hazard**: apply probabilistic winter weather model for the region
- **Asset vulnerabilities:** severity (ice accumulation) versus damage
- **Portfolio Damage:** probabilistic analysis -damage/ loss

Aggregate Damage Exceedance and Expected Annual Damage

A probabilistic database of losses is developed using the ice hazard, assets at risk and their vulnerabilities. For each ice storm, the temperature, barometric pressure, precipitation, elevation, wind speeds and duration were defined. The ice accumulation for each storm is integrated with the asset vulnerability and the asset locations to compute the damage. The annual frequency and the portfolio damage for each simulated ice storm is determined. By manipulating this database of thousands of ice storm losses, various loss exceedance or non-exceedance distributions are generated.

The frequencies and computed damage for all ice storms are combined to calculate the expected annual loss and the annual aggregate exceedance relations.

Aggregate damage exceedance calculations are developed by keeping a running total of damage from ***all possible events*** in a year. At the end of year, the aggregate damage for all events is then determined by probabilistically summing the damage distribution

from each event, taking into account the event frequency. The process considers the probability of having zero events, one event, two events, etc. during the year.

A series of probabilistic analyses were performed, using the vulnerability curves derived for SCE&G T&D assets and the computer program USWinterStorm™. A summary of the analyses are presented in Table 2-1, which shows the aggregate damage (i.e. deductible is "0") exceedance probability for damage levels between zero and $180 million dollars.

For each damage level shown, the probability of damage exceeding a specified value is shown. For example, the probability of damage exceeding $10 million in one year for the ice storm hazard is 19.7%. The analysis calculates the probability of damage from all ice storms and aggregates the total.

Table 2-1. provides the aggregate damage exceedance probabilities for the SCE&G T & D assets for a series of damage levels at $10 million intervals.

The second column of the table, labeled 1 year Exceedance Probability, provides the 1-year modeled probability of exceeding the damage level, i.e. the probability that the total damage from all events in a 1 year period will exceed that level.

The expected annual damage (EAD) to T&D assets from the ice storm hazard is $7.7 million. This value represents the average damage from all simulated ice storms. The EAD is not expected to occur each and every year. Some years will have no damage from ice storms, some years will have small amounts of damage and a few years will have large amounts of damage. The EAD represents the average of all ice storm losses over a long period of time.

Table 2-1

SCE&G T & D ASSETS
AGGREGATE TOTAL DAMAGE EXCEEDANCE PROBABILITIES
ICE HAZARD

Damage Level	1 Year
($)	Exceedance Probability
≥ 500,000	49.81%
10,000,000	19.73%
20,000,000	10.69%
30,000,000	6.41%
40,000,000	3.91%
50,000,000	2.40%
60,000,000	1.58%
70,000,000	1.07%
80,000,000	0.69%
90,000,000	0.50%
100,000,000	0.37%
110,000,000	0.29%
120,000,000	0.23%
130,000,000	0.18%
140,000,000	0.15%
150,000,000	0.12%
160,000,000	0.08%
170,000,000	0.05%
180,000,000	0.02%

3. Hurricane Landfall Analyses for SSI Ranges

In order to provide further insight into SCE&G's hurricane risk profile, the set of stochastic hurricane events were analyzed by landfall for hurricane intensities, SSI 2 through 4. The landfall locations are at mileposts from about 1900 to 2050 on the Atlantic Coast. Figure 2-1 below illustrates the landfall ranges. These mileposts on the Atlantic coast extend from the South Carolina – Georgia border near milepost 1900 to the South Carolina – North Carolina border near milepost 2050 at 10 mile intervals.

The set of simulated hurricanes results within the SSI category was analyzed for SCE&G's T&D portfolio. For each milepost and SSI category, the frequency-weighted average damage was computed from all stochastic hurricanes making landfall within 10 nautical miles of a given milepost and within that SSI category. Figures 3-2 through 3-4 provide these results.

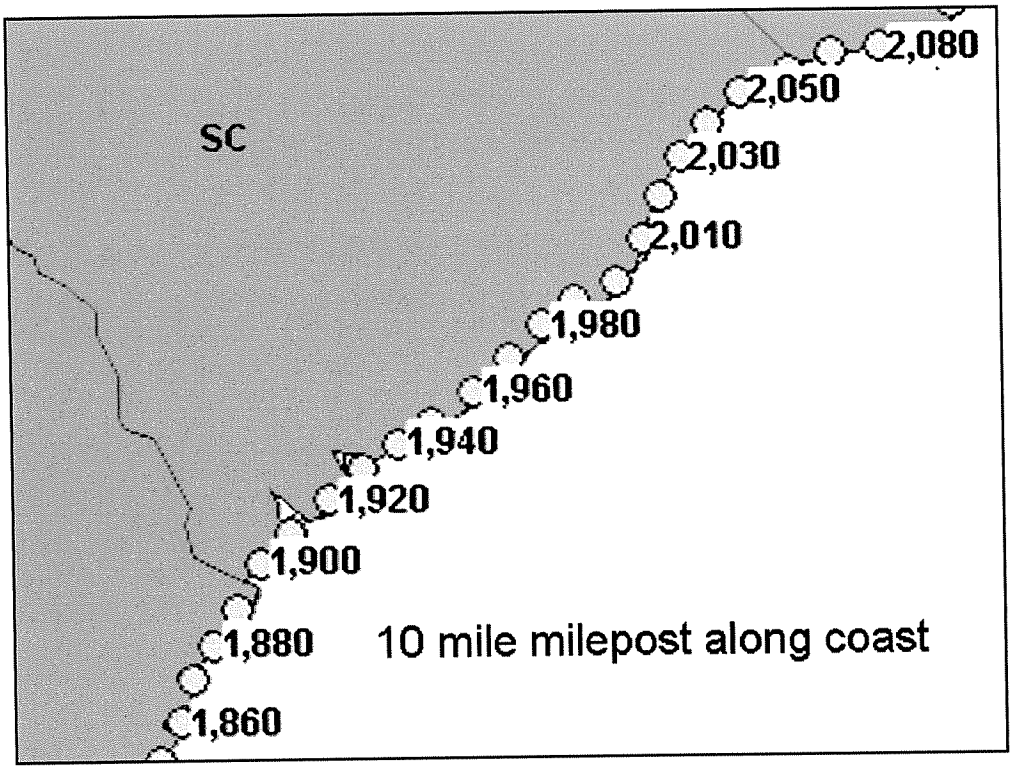


Figure 2-1: Hurricane Landfall Milepost

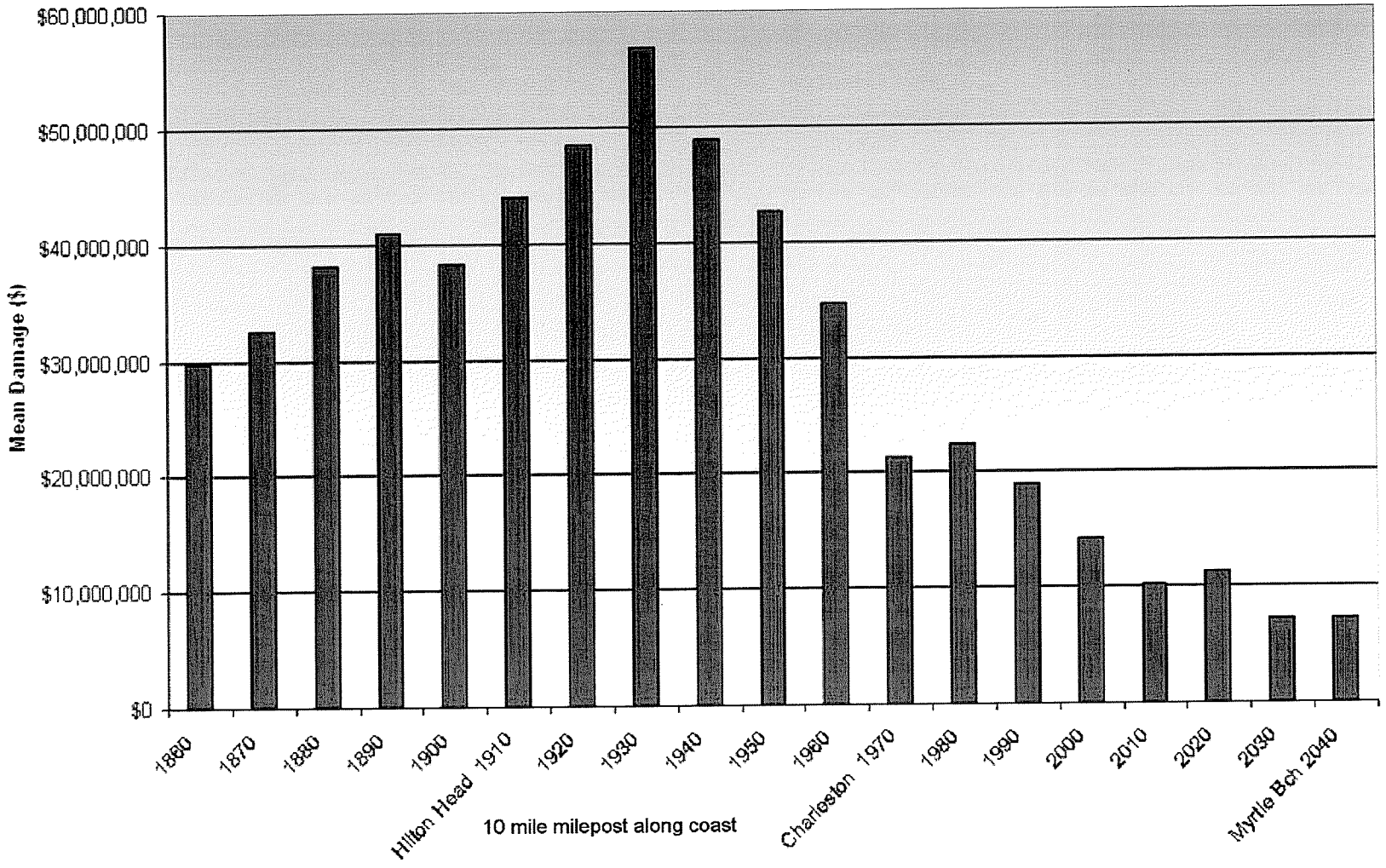


Figure 3-2: Frequency Weighted Average Transmission & Distribution Damage from Single SSI 2 Landfalls

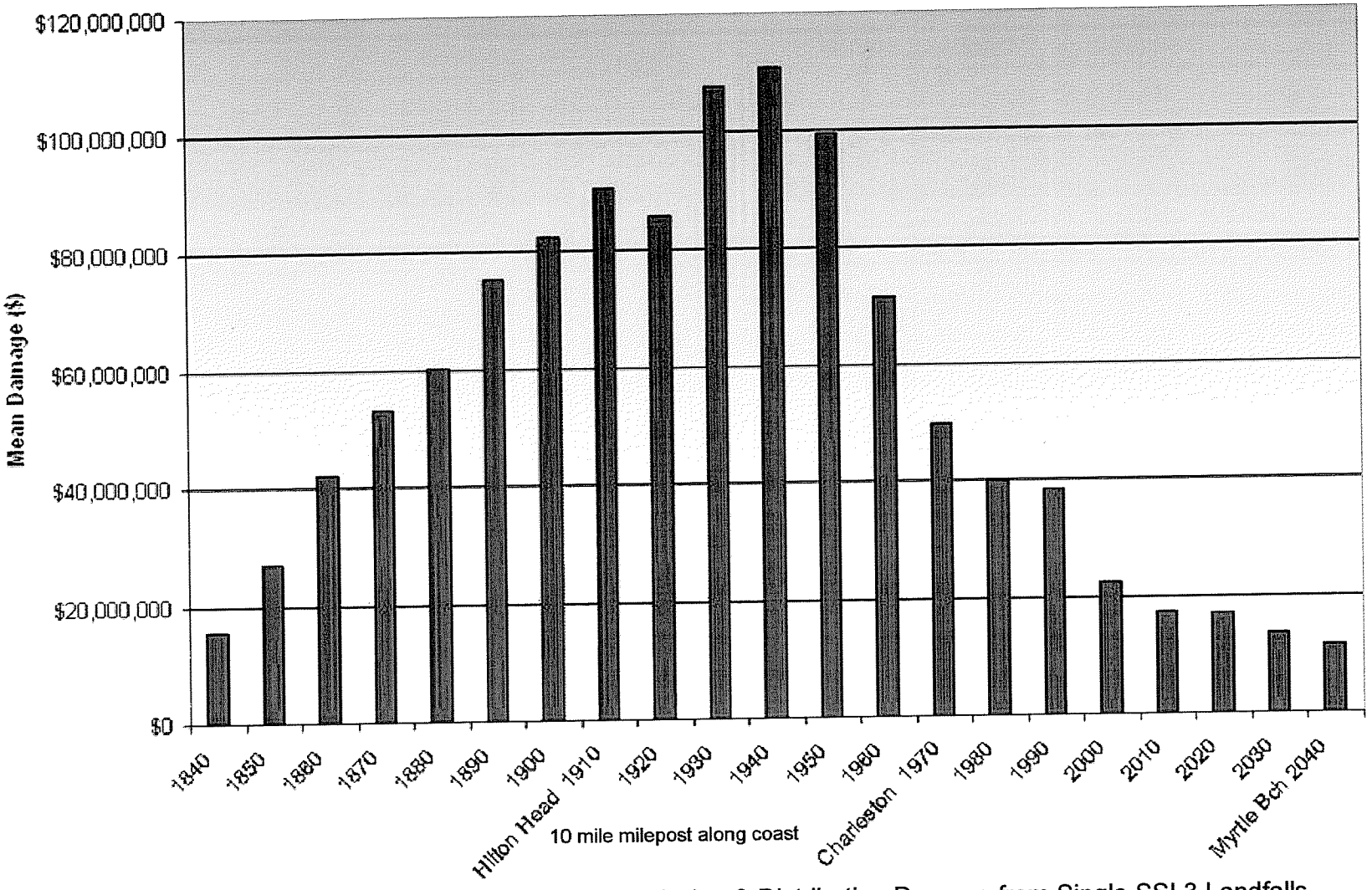


Figure 3-3: Frequency Weighted Average Transmission & Distribution Damage from Single SSI 3 Landfalls

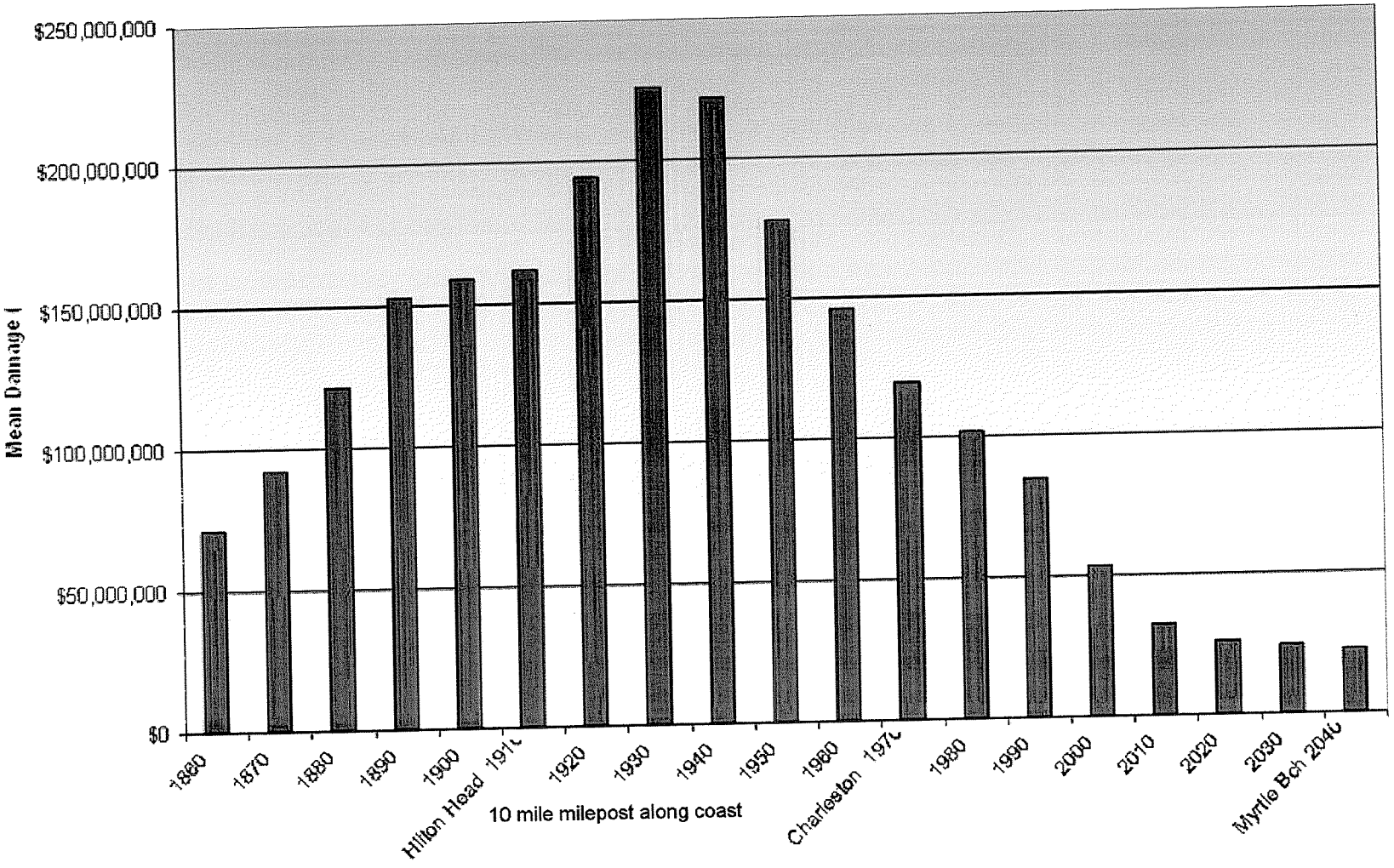


Figure 3-4: Frequency Weighted Average Transmission & Distribution Damage from Single SSI 4 Landfalls

4.0 Reserve Solvency Analysis

Three trial probabilistic analysis of funding strategies for the SCE&G Storm Damage Reserve and losses from hurricanes and ice storms were performed to determine their potential impact on the performance of the Reserve.

Analysis

The trial Reserve solvency analysis consisted of performing 10,000 iterations of hurricane and ice storm loss simulations within the SCE&G service territory, each covering a 10-year prospective period, to determine the effect of the charges for damage on the SCE&G Reserve. Monte Carlo simulations were used to generate damage samples for the analysis. The analysis provides an estimate of the Reserve assets in each year of the simulation, accounting for the initial balances, the annual accruals, and hurricane and ice storm damage using a dynamic financial model.

Assumptions

Analyses were performed which included the following assumptions:

- All analyses include an initial Reserve balance of $46 million.
- Annual Reserve accruals are initially $6 million and grow by 2% per year.
- Three cases are analyzed. Each case has a Cap imposed on the maximum balance of Reserve of $50 million, $75 million or $100 million. When Reserve balances equal or exceed the Cap in any year, the accrual for the following year is omitted.
- The expected annual hurricane and ice storm damage is $15.7 million as described in Sections 1 and 2.
- The portion of the expected annual damage excess of a $2.5 million SCG&E annual deductible, associated with O&M expenses (non-capitalized charges) for T&D service restoration, that is assumed to be an obligation to the Reserve is $10.2 million.
- SCE&G T&D asset values, as well as hurricane and ice storm losses are assumed to grow at a 5.5% annual rate over the simulation period.
- The Reserve is assumed to be unfunded and charges associated with borrowing when the Reserve balance is negative are not obligations to the Reserve.

The results show the initial balance, the mean (expected) Reserve fund balances over a the ten year simulation period. The probability that the Reserve fund balance will be

negative in any one or more of the first five years of the simulated time horizon for each case is also determined. Figures 4-1 through 4-3 below show the results of the Reserve fund solvency analyses. These results show the mean (or expected values) of the Reserve fund balances as well as the 5th and 95th percentiles.

Figure 4-1 shows the results of the current Reserve annual accrual of $6 million and $50 million cap. Given an initial Reserve balance of $46 million, an annual accrual of $6 million, and a $50 million Cap on the Reserve balance, the Reserve has a mean (expected) balance of negative ($20 million) at the end of the ten year period for the combined hurricane and ice perils. The 5th percentile and 95th percentile year 10 ending Reserve Balances are a negative ($158) million and about $51 million. The Reserve fund has a 58% chance of having insufficient funds in one or more of the first five years of the simulation and about a 70% chance of having a balance of $50 million or greater within the first five years of the simulation.

Similarly, for an initial Reserve balance of $46 million, an annual accrual of $6 million, and a $100 million Cap, Figure 4-3 illustrates the expected performance of the Reserve. The Reserve has a mean balance of negative ($8 million) at the end of the ten year period for the combined hurricane and ice perils. The 5th percentile and 95th percentile year 10 ending Reserve Balances are $75 million and negative ($153 million). The Reserve fund has about a 51% chance of insolvency in one or more of the first five years of the simulation and about a 70% chance of having a balance of $50 million or greater within the first five years of the simulation.

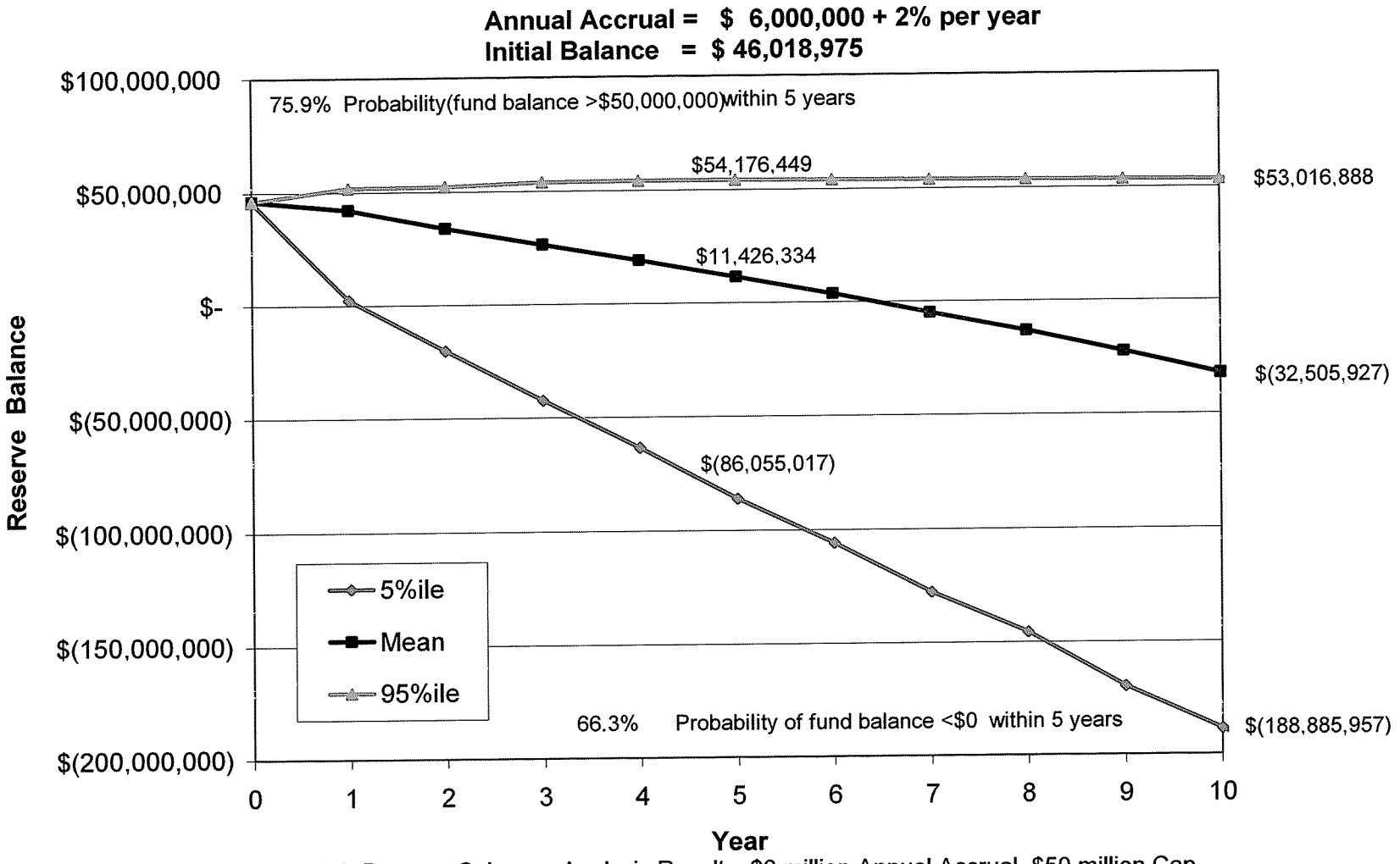


Figure 4.1: Reserve Solvency Analysis Results: $6 million Annual Accrual, $50 million Cap

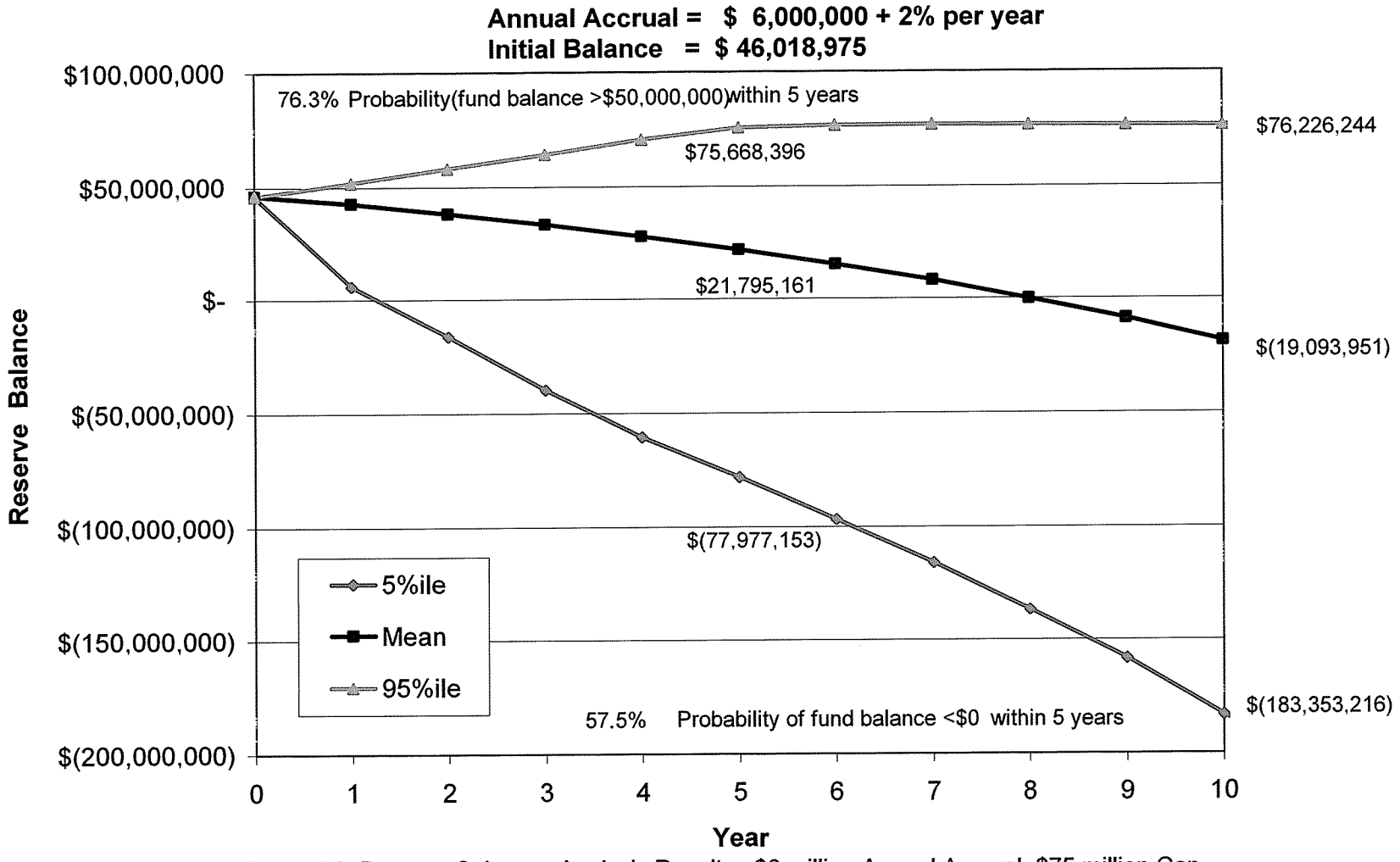


Figure 4.2: Reserve Solvency Analysis Results: $6 million Annual Accrual, $75 million Cap

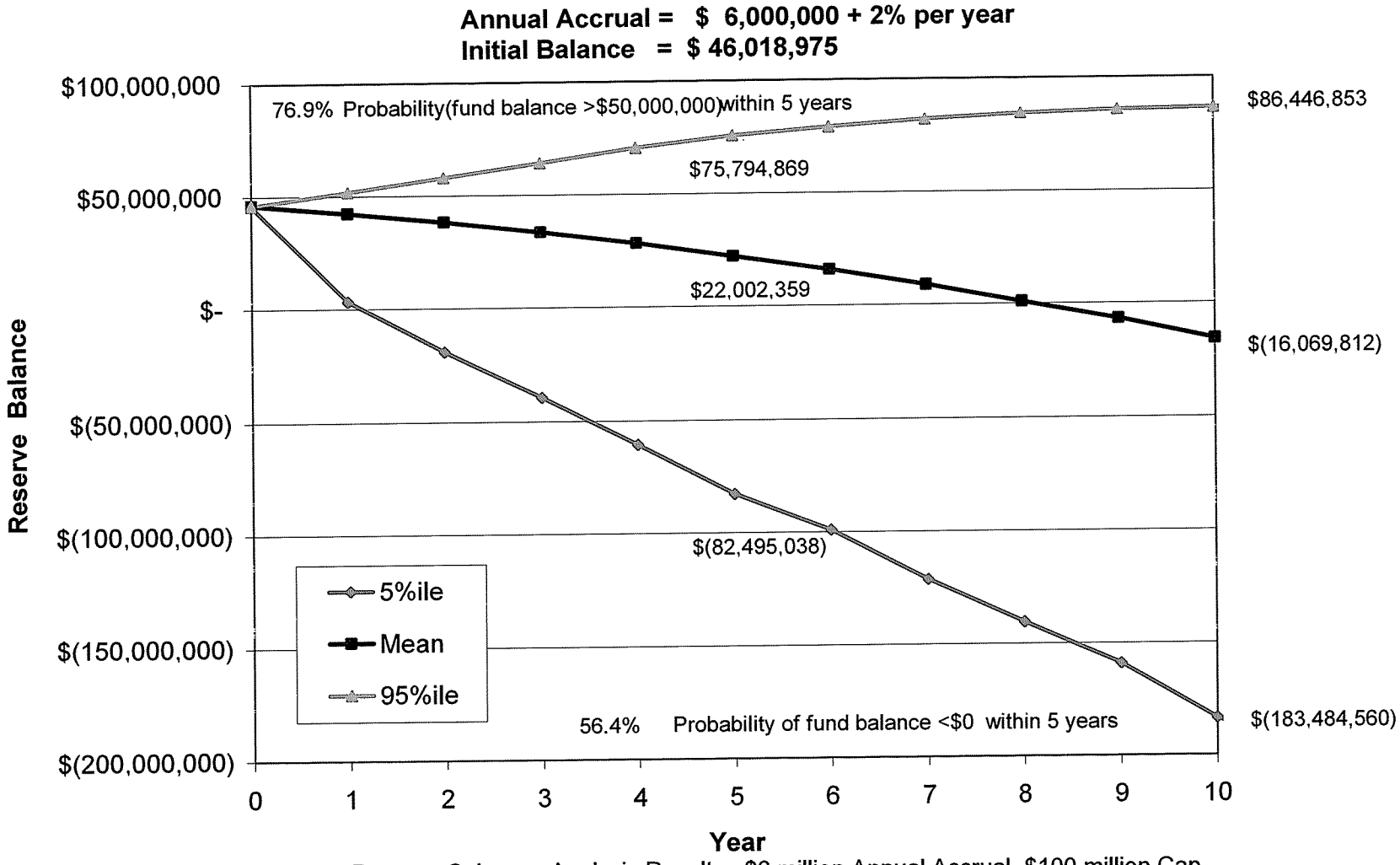


Figure 4.3: Reserve Solvency Analysis Results: $6 million Annual Accrual, $100 million Cap

5.0 Limitations

SCE&G has had favorable hurricane and ice storm experience over the past three decades. SCE&G's significant hurricane losses consist of Hurricane Floyd in 1999 and Hurricane Hugo in 1989. There have been no significant hurricane losses less than 8 years old. SCE&G has had three ice storm events in the 2000, 2002 and 2004. All these losses have been relatively small. In the development and calibration of the hurricane loss model for SCE&G, EQECAT has explicitly considered SCE&G's two past hurricane losses along with loss experience from other electric utilities in the southeast United States.

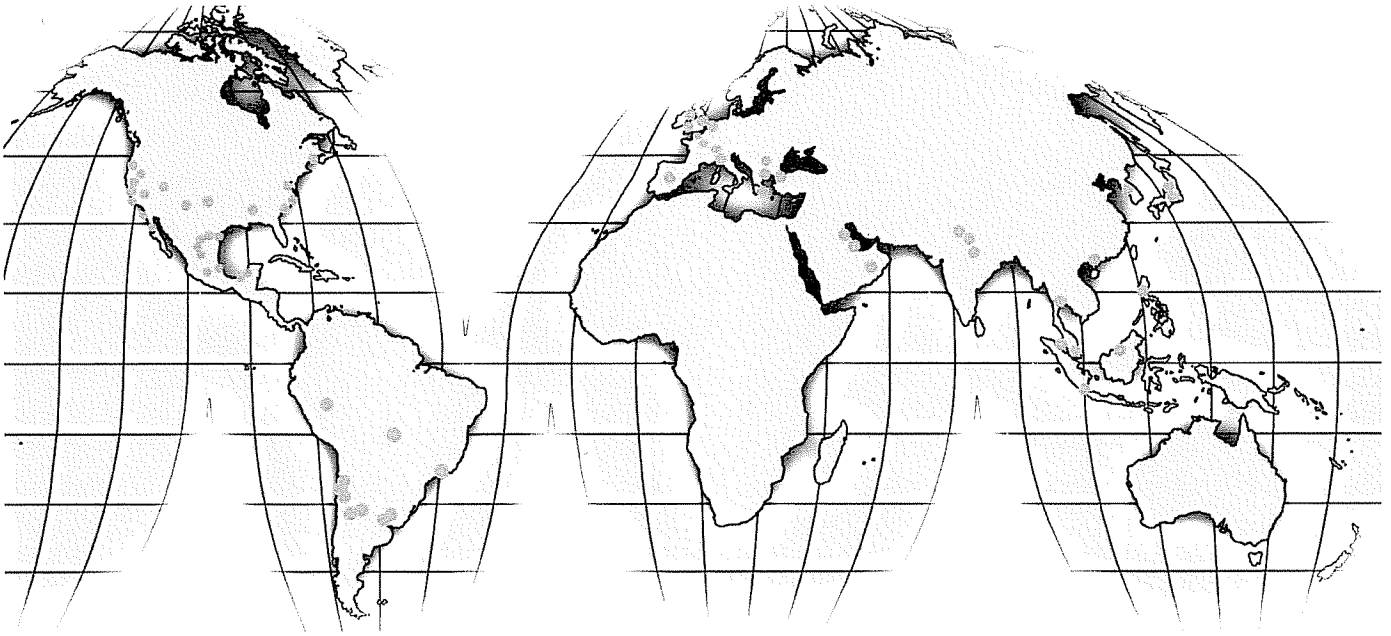
There are many factors that can affect hurricane and ice storm damage and service restoration cost that may be significantly different from today than from the conditions at the time of Hurricanes Floyd and Hugo. These factors include the age and material conditions of SCE&G infrastructure. There have also been changes in land use since the historic events that can change onshore wind speeds, and there are differences in vegetation and urbanized structures, both of which generate damaging debris. Utility restoration practices, schedules, mutual aid agreements, and availability of contract services and materials also will affect service restoration costs. The general level of damage to regional water, transportation, structures and telecommunications and other infrastructure also affects the total difficulty and cost of service restoration.

Much of the damage experienced in Hurricane Hugo in coastal regions around Charleston required replacement of damaged infrastructure. New SCE&G infrastructure may be designed to more recent and higher design standards. Therefore the current vulnerability of SCE&G assets should be expected to be different from those in place during past hurricanes.

Hurricane and ice storm events also exhibit significant variability in wind and ice fields. Hurricanes also have the potential for some events to generate devastating tornado micro-bursts. High moisture content of soils are also associated with higher amounts of damage to distribution assets due to fallen trees and lower strength of poles. Transmission and distribution system damage and system restoration costs in future events should therefore be expected to subject to these types of variability. The modeled loss estimates for specific future events will not and should not be expected to precisely reflect actual system restoration costs due to the unknown nature of future events and the variability associated with the damage and the restoration processes.

6. References

1. "Florida Commission on Hurricane Loss Projection Methodology", EQECAT, an ABS Group Company, February 2006.



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BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

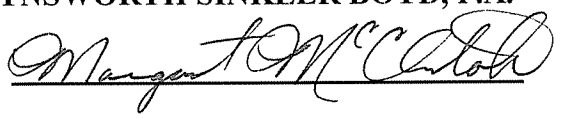
IN RE:

South Carolina Electric & Gas Company)
Letter Requesting Accounting Order) **CERTIFICATE OF SERVICE**
Related to Storm Damage Reserve Fund)

This is to certify that I, Margaret A. McClintock, an employee of Haynsworth Sinkler Boyd, P.A. have, on this date, served one (1) copy of the **LETTER REQUESTING ACCOUNTING ORDER RELATED TO STORM DAMAGE RESERVE FUND AND ATTACHED STUDY** in the above referenced matter to the persons named below by causing said copy to be served via hand delivery and email, and addressed as shown below:

Shannon Bowyer Hudson, Esquire
South Carolina Office of Regulatory Staff
1441 Main Street, Suite 300
Columbia, SC 29201
shudson@regstaff.sc.gov

HAYNSWORTH SINKLER BOYD, P.A.

By: 

Margaret A. McClintock
Paralegal

September 10, 2007